Leadership and Teaming in an IPPD Environment

Barbara Tyson and Diane Gibson
Presented at
1st Annual CMMI Technology Conference
November 13-15, 2001

Software Engineering Institute
Carnegie Mellon University
Pittsburgh, PA 15213-3890

IPPD, as defined in CMMI®

IPPD provides a systematic approach to product development that achieves a timely collaboration of relevant stakeholders throughout the product life cycle to better satisfy customer needs

- **IPPD is *not* a discipline.**
- **IPPD is a way of doing business.**
- **IPPD is employed in conjunction with the rest of the model and it shapes how work is performed when using CMMI® SE/SW.**

Nine fundamental concepts in IPPD

Five concepts embedded in CMMI® SE/SW

- design of downstream processes during product design
- timely, appropriate collaboration of all relevant stakeholders
- focus on the customer's needs during product and process development
- continuous, proactive identification and management of risk
- focus on measurement and improvement of processes to develop and deliver the product

IPPD PAs add four concepts

Four concepts introduced in the IPPD component of the CMMI®

- **Leadership commitment to IPPD**
- **Appropriate allocation and delegation of decision-making**
- **Use of multifunctional teams**
- **Organizational structure that rewards team performance**

Characteristics of leadership and teaming in an IPPD environment

What kind of leadership is needed?

What are the teaming requirements?

What does the organization need to do to support leadership and teaming for IPPD?

What is leadership?

What is Management?
- **Managers administer**
- **Managers maintain**
- **Managers have a short-range view**
- **Managers accept status quo**
- **Managers get things done right**

What is Leadership?
- **Leaders innovate**
- **Leaders develop**
- **Leaders have a long-range perspective**
- **Leaders challenge it**
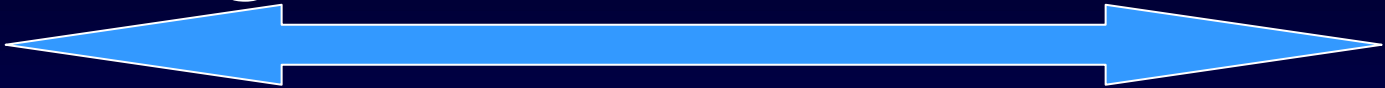
- **Leaders get the right things done**

Adapted from Warren Bennis

Managers manage things; leaders lead people.

Grace Hopper

Approaches to leadership and management

- **Theory X**
- **authoritarian**
- **top-down, high control**
- **utilize personal rewards**
- **engender dependency**

- **Theory Y**
- **participatory**
- **encourage treating the business as own**
- **utilize meaningful work**
- **engender autonomy**

Adapted from Peter Block

In IPPD,

people are recognized not as the tool or means to the end,
but as part of a mutually beneficial collaboration to achieve
the objectives.

Leadership skills important in IPPD

- **communicating purpose and vision**
- **influencing others to achieve the shared vision**
- **building skills and experience of staff members**
- **building teams**
- **empowering people and teams**

Leadership challenges in IPPD

- **ensuring all team members mutually understand their roles and responsibilities**
- **employing people in their intended roles**
- **effectively integrating specific expertise resident in the organization into the integrated team effort**

Leadership of empowered teams

Manager/leader responsibilities
- defining work
- guiding and motivating team members
- handling customer issues
- dealing with management
- monitor and maintain of process discipline
- resolving team issues
- maintaining communication
  - within team
  - with management

**In IPPD,
leadership characteristics cannot be viewed as solely
embodied in the manager/leader.**

What is a team?

A group of people with complementary skills and expertise who are committed to delivering specified work products in timely collaboration. (CMMI SE/SW)

A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable. (Katzenbach)

A team consists of
- at least two people, each with a specific role,
- <who> are working toward a common goal, <and>
- completion of <their> mission requires some form of dependency among the group members. (TSP^{SM})

In an integrated team...

Integrated team members:

- provide skills and advocacy appropriate to all phases of the work product's life cycle

- are collectively responsible for delivering the work products as specified.

- include empowered representatives from organizations, disciplines, and functions that have a stake in the success of the work products.

Traditional or IPPD with teams

Comparison of Extremes
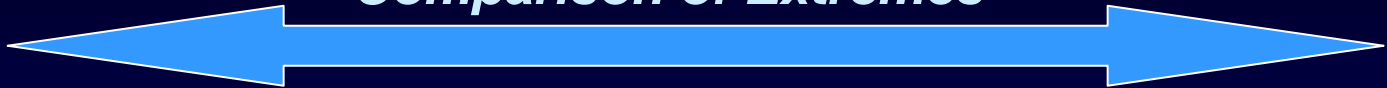
- independent
- functional
- attention to specific part
- particular goals
- hierarchical decision-making
- solution provided
- specialists only
- minimal communication
- performance reviewed by managers

- interdependent
- multi-functional
- attention to final product
- shared vision
- empowerment

- solution developed by team
- specialists and stakeholders
- consistent communication
- performance reviewed by team members

Successful IPPD with teams...

- shared vision (team aligned with organization, project)

- defined processes for team work, including
  - defined roles, tasks, operating procedures and charter
  - defined authority/empowerment
  - managed relationships to other teams, projects

- shared responsibility for product

- multi-functional team membership

- adequate resources, proactive management of risks

- training in IPPD unique skills

- specialized tools and communications mechanisms

What can organizations do?

"It is nearly impossible to impose a team structure on a traditional organization structure." Wellins, Byham & Dixon

Redesign structure, including....

- organize around major processes, not functions
- redefine jobs -- at all levels
- be ready to overhaul related systems / functions

Change culture, including....

- trust and respect across all levels
- consistent actions & messages from senior management

Expect a long iterative process of social as well as technical learning

Need a strong business reason to make this change

What is needed?

Organizational culture, policies, procedures to
  provide:

- **Vision and goals that permeate planning and work**
- **Workforce competencies - multi-skilled and flexible**
- **Teamwork**
- **Defined responsibility and authority**
- **Focus on people**
- **Rewards and recognition**

Provide team training

Studies of IPPD and teaming consistently point to the need for training in the following areas:

Cross-functional skills
- what do other disciplines bring to this effort

Skills for working in teams
- meeting management, decision-making, process and quality related skills, planning, performance evaluation

Interpersonal skills
- communication, interaction and negotiation, listening, giving feedback, conflict management

Provide leadership development

Organizational skills
-strategic planning, team development, new training efforts

Skills for working with teams
-coaching, facilitating, problem solving, handling team issues, performance management

Interpersonal skills
-communication, interaction and negotiation, listening, giving feedback, conflict management

Enable empowerment at all levels

- **Organizational level**
    - provide clear direction
    - provide consistent and constant support

- **Project Leader level**
    - ensure resource availability
    - make large-scope decisions
    - determine constraints

- **Team member level**
    - push decision-making to lowest level
    - don't ask teams to make decisions until ready
    - team members also take responsibility

        – **doesn't mean management abdication**

Presentation bibliography

- **Bennis, Warren**
  - On Becoming a Leader, Reading, MA: Addison-Wesley Publishing (1989)
- **Block, Peter**
  - The Empowered Manager, San Francisco: Jossey-Bass Publishers (1988)
- **Humphrey, W. S**.
  - The Team Software Process ^{SM} (TSP^{SM}). CMU/SEI-2000-TR-023
- Katzenbach, J and Smith, D.
  - The Wisdom of Teams : Creating the High-Performance Organization Harvard Business School Press, (1992)
- **Wellins, William; Byham, William; Dixon, George**
  - Inside Teams, San Francisco: Jossey-Bass Publishers (1994)